

# FAST FACTS

## POLYCHLORINATED BIPHENYLS

### Missouri Department of Health and Senior Services Hazardous Substance Emergency Events Surveillance (HSEES) Program

**Synonyms:** Chlorodiphenyls  
Aroclors®  
Kanechlors®

**CAS Number:** 1336-36-3

**DOT Numbers:** UN2315

**DOT Designation:** N/A

Hazard Rating	NFPA
HEALTH	2
FLAMMABILITY	1
REACTIVITY	0
<ul style="list-style-type: none"><li>• Carcinogen</li><li>• Poisonous gasses are produced in fire</li></ul>	

#### Hazard Rating Key:

0=minimal; 1=slight; 2=moderate; 3=serious; 4=severe

#### Exposure Levels

- Inhalation may produce irritation to the nose, throat and lungs. Levels above 10 mg/m<sup>3</sup>\* are reported to be unbearable. Inhalation may contribute significantly to all symptoms of long-term exposure.
- Skin absorption is moderate, and contributes significantly to all symptoms of long-term exposure. Sensitized individuals may develop a rash after two days of exposure by contact or inhalation.
- PCBs may produce eye irritation. Levels of 10 mg/m<sup>3</sup> are severely irritating.
- Ingestion contributes significantly to all symptoms of long-term exposure. There are no reported deaths of humans due to a single ingestion; however, experiments in animals suggest that ingestion of 6 to 10 fluid ounces would cause death to a healthy 150 pound adult.
- PCBs are readily absorbed into the body by all routes of exposure and may persist in tissues for years after exposure. Symptoms may be felt immediately, or they may be delayed for weeks or months, and may last for months.

- High levels of PCB vapor (1 to 10 mg/m<sup>3</sup>) may produce a burning feeling in the eyes, nose and face; lung and throat irritation; nausea; dizziness; and chemical acne.

#### Characteristics and Potential Exposures

PCBs are mixtures of chemicals that form clear to yellow, oily liquids, or mixtures that form white, crystalline (sand-like) solids and hard resins. They are used in insulation for electric cables and wires in the production of electric condensers, as additives for extreme pressure lubricants, and as a coating in foundry use.

#### PCB Releases in Missouri

During calendar years 1994-1998, 1,071 HSEES events were reported in Missouri. Of those, 47 events involved PCBs. Quantities released ranged from 16 ounces to 500 gallons. Fixed facilities were involved in 27 of these events, while 15 occurred during transport.

No injuries or evacuations occurred as a result of the release of PCBs during this five-year period. Many of the PCB releases were caused by damage to electrical transformers during severe weather, acts of vandalism and motor vehicle accidents.

#### Interesting Event

Vandals damaged ten transformers in three different areas of a former lumberyard over the period of four days. The vandals took three of the smaller units and removed the internal parts from the seven larger units, presumably for scrap metal. Three of the seven units contained PCB oil. Approximately 350 gallons of PCB oil were released.

The oil soaked into the ground in the immediate area at all three locations. In one location, oil flowed into a pond. A spill contractor was brought in to conduct the cleanup and removed six to eight inches of soil with a backhoe from each affected area. Environmental sampling was conducted after the cleanup to ensure there were no measurable PCBs at the three sites.

\* mg/m<sup>3</sup> means milligrams of a chemical in a cubic meter of air. It is a measure of concentration (weight/volume).

## Health Hazard Information

- Short-term exposure may cause irritation to the skin, nose, throat, eyes and lungs.
- Long-term exposure may cause a burning feeling in the eyes, nose and face; lung and throat irritation; nausea; dizziness; and chemical acne.
- Liver damage and digestive disturbance have been reported in some individuals. PCBs may impair the function of the immune system.

## Personal Protective Equipment Guidelines

- Avoid skin contact with PCBs. Wear protective gloves and clothing.
- Wear splash proof chemical goggles and a faceshield when working with PCB liquid, unless full facepiece respiratory protection is worn.
- Wear dust proof goggles and face shield when working with crystalline solids or dust, unless full facepiece respiratory protection is worn.
- When the potential exists for exposures over 0.001 mg/m<sup>3</sup>, use a National Institute for Occupational Safety and Health (NIOSH) approved supplied-air respirator with a full facepiece operated in a pressure-demand or other positive-pressure mode.

## Handling and Storage

- A regulated, marked area should be established where PCBs are handled, used or stored.
- Store PCBs in tightly closed containers in a cool, well-ventilated area away from strong oxidizers (such as chlorine, bromine and fluorine).

## Spills and Emergencies

- Most environmental emergencies involve spills of hazardous materials that must be reported to the Department of Natural Resources through a 24-hour hotline (573-634-2436). When reporting a spill, callers can also obtain technical assistance regarding response, containment and cleanup of hazardous materials.
- Evacuate and isolate the area of the spill or leak, and restrict persons not wearing protective equipment from areas of spills or leaks until cleanup is complete.
- Ventilate the area of the spill or leak.
- Absorb liquid spills in vermiculate, dry sand, earth, or a similar material, and deposit in sealed containers.

## Disposal Methods

Incineration (3000° F) with scrubbing to remove any chlorine-containing products is recommended. In addition, some chemical waste landfills have been approved for PCB disposal.

## Fire Extinguishing

- PCBs may burn, but do not readily ignite.
- Use dry chemical, CO<sub>2</sub>, water spray, or foam extinguishers.
- Poisonous gasses are produced in fires, including dioxin and chlorinated dibenzofurans.

## Emergency First Aid Measures

### Eye Contact

- Immediately flush with large amounts of water. Continue for at least 15 minutes, occasionally lifting upper and lower lids.

### Skin Contact

- Quickly remove contaminated clothing. Immediately wash skin with large amounts of soap and water.

### Respiratory

- Remove the victim from the site of the release.
- Begin rescue breathing if breathing has stopped, and CPR if heart activity has stopped.
- Transfer the victim promptly to a medical facility.

### Ingestion

- If PCBs are swallowed, give large quantities of saltwater and induce vomiting. Seek medical attention immediately.



**For more information on the Missouri HSEES program, visit the web site at [www.dhss.state.mo.us/hsees](http://www.dhss.state.mo.us/hsees) or contact the HSEES Coordinator at 573-526-1686.**



*Information for this fact sheet was obtained from the Missouri HSEES Program Five-Year Data Analysis; the Environmental Protection Agency (EPA); the Agency for Toxic Substances and Disease Registry (ATSDR); and the Handbook of Toxic and Hazardous Chemicals and Carcinogens, Third Edition.*

**This publication was supported by Grant/Cooperative Agreement Number 780955 from ATSDR. Its contents are solely the responsibility of the authors and do not necessarily represent the official views of ATSDR.**

**THIS FACT SHEET DOES NOT REPLACE THE MATERIAL SAFETY DATA SHEET (MSDS) REQUIRED FOR A HAZARDOUS CHEMICAL UNDER THE OCCUPATIONAL HEALTH AND SAFETY ACT OF 1970 (29 U.S.C. 651 ET SEQ.) AND REGULATIONS PROMULGATED UNDER THIS ACT.**